

National Activity Report for 2002-2003

U.S. National Member Body
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The U.S. Technical Advisory Group (TAG) to SC22 is INCITS/CT22.

The U.S. has continued to be active in many of SC22's Working Groups. In particular, the activities of the following TAGs are reported here:

Ada:

- For SC22/WG9, the U.S. TAG is the Institute of Electrical and Electronics Engineers (IEEE).
- The TAG is actively involved in developing an amendment for 22.10.01 -- IS 8652:1995 Programming Languages: Ada.
- The TAG is participating in the maintenance of 22.5291 – IS 15291:1999 Ada Semantic Interface Specification (ASIS), 18009 – IS 18009, Ada Conformity Assessment, and 22.15942 -- TR 15942 Guidance for the use of the Ada Programming Language in High Integrity Systems.
- The TAG is participating in the development of an Amendment to ISO/IEC 8652:1995.
- The TAG participated in the development of a guide to the use of the "Ravenscar Profile," a programming idiom permitting the use of a low-overhead run-time system in Ada programs.
- The TAG provided support for the three WG 9 working groups – Ada Rapporteur Group (ARG), Annex H Rapporteur Group (HRG), ASIS Rapporteur Group.

C:

- For SC22/WG14, the U.S. TAG is INCITS/J11.
- J11 continued to provide much of the resources for maintaining ANSI-ISO/IEC 9899:1999.
- J11 assisted in the development of a TR on C Extensions to Support Embedded Processors.
- J11 assisted in the development of a TR on the Specification for Additional Character Data Types to the Programming Language C.
- J11 is preparing a new work item for new C library functions that prevent overwriting the end of strings and other memory regions. This is a major aid in producing more secure software not prone to "buffer overrun attacks."

- In the last year, both of J11's meetings were co-located with SC 22/WG 14.

C++:

- For SC22/WG21, the U.S. TAG is INCITS/J16.
- Work on the first Technical Corrigendum was completed, although final editing was not completed in time for submission to ISO in this calendar year.
- Approval for work on a new version of the standard was obtained.
- Technical Report NP18015 on C++ performance was registered, and work continued on its contents.
- A new Technical Report on additions to the C++ standard library was proposed, with work beginning on its content.
- Many Defect Reports were resolved during this year.
- J16 continues to hold co-located meetings with WG21.
- To maximize liaison opportunities with the C committee (US J11 and WG14), all meetings are coordinated to run consecutively in a single location. Also, all individuals who commonly attend both meetings, and all representatives of organizations commonly represented at both meetings, have been named as formal liaisons.

COBOL:

- For SC22/WG4, the U.S. TAG is INCITS/J4. J4 is responsible for the development of the U.S. and international standards for COBOL (INCITS/ISO/IEC 1989); the development of related amendments, technical reports, and technical corrigenda; and the processing of related defect reports.
- J4 submitted a document that was the subject of an ISO/IEC FDIS ballot that closed 11 September 2002. The new COBOL standard was approved without a negative vote.
- Features included in the COBOL revision are cultural adaptability, object orientation, enhanced inter-operability with other programming languages, new data types (bit, floating point, native binary, pointers), strong typing, enhanced portability of arithmetic, support for multiple-octet coded character sets, a screen handling facility, data validation support, conditional compilation, exception handling, storage allocation support, and file sharing with record locking.
- J4 developed TR 19755, Object Finalization for Programming Language COBOL, as requested by SC22. This TR has been approved for publication.
- J4 began development of technical reports for collection classes and XML support.
- J4 began development of a revision targeted for 2008, after the scope and target date were set by WG4. The scope is: native syntax for XML, collection classes, dynamic tables, function pointers, variable length data items, increase size limit of non-numeric literals, locale on upper and lower case functions, structured constants, pipes, increase minimum maximum for record locks, function for current date in ISO-standard format, remove "hardware" from GR2 of the ACCEPT statement, and new relational operator \diamond for inequality. In addition, the following will be investigated and included if possible in the set timeframe: asynchronous processing, command line and

environment variables, and method overloading. Inclusion of finalizers is contingent upon the investigation of asynchronous processing.

- J4 anticipates future work will also include defect handling.

Fortran:

- For SC22/WG5, the U.S. TAG is INCITS/J3.
- Published Committee draft for 2003 standard for public comment. Received, processed and answered all public comments. SC22/WG5 meeting 28 July to 1 August should result in final technical content. INCITS/J3 meeting 18-22 August should result in FCD.

Language Independent Datatypes:

- For part of SC22/WG11's work, the U.S. TAG is INCITS/L8.
- The specification ISO/IEC 11404, Language Independent Datatypes, is being revised. The CD text will be distributed to SC22 very soon. There is increasing interest in this work outside of SC22 (e.g., SC32 - Data management and Interchange, SC36 - Learning, Education, and Training, TC211 Geomatics, IEEE LTSC, and the W3C consortium) are interested in this specification. L8 contributed a working draft of the revision of 11404 and (shortly will contribute) a roadmap document.

Pascal:

- For SC22/WG2, the U.S. TAG is INCITS/J9.
- For the 5-year maintenance review for the U.S. Pascal Standard, which is a reference to ISO/IEC 7185:1990, the committee voted unanimously that the standard should be turned into a stabilized standard.
- J9 is in Maintenance Mode. It is prepared to answer interpretation questions on the Pascal and Extended Pascal standards, but has not received any in the last year.

PL/I:

- The U.S. TAG is INCITS/J1.
- During the last year there were no meetings, no requests for clarification requests, and no substantive actions.

POSIX

- The U.S. TAG to WG15 is held by IEEE.
- All substantive work on the POSIX base specifications (kernel, Shell and Utilities, etc) is being carried out in the Austin Group. The unified specification was completed in late 2001 and the Austin Group is currently working on Technical Corrigenda 2. Work on TC2 is expected to be completed in late 2003.
- At the October, 2002 meeting of the WG15 TAG, the TAG stated its intent that the TAG should be disbanded in early 2003 upon the successful completion of the JTC1 ballot on the Technical Corrigendum1 for ISO/IEC 9945-1:2002. On April 2, 2003 the WG15 TAG initiated a TAG Letter Ballot to dissolve the WG15 TAG. This ballot

passed without objection and the TAG Administrator has been notified of the results and requested to take the appropriate actions to dissolve the WG15 TAG.

- Because the member body participation in SC22/WG15 has fallen below critical mass, and no work is now actively being done there on an ongoing basis, the WG15 TAG has recommended that the U.S. propose the dissolution of SC22 WG 15. The TAG believes that the work has been successfully completed and it is time to “declare victory.”

Prolog:

- For SC22/WG17, the U.S. TAG is INCITS/J17.
- The U.S. is contributing to WG17 subgroups working on proposals to standardize Definite clause grammars, foreign language interface, and global variables. A draft on Definite clause grammars is being prepared.
- The international Prolog community is showing renewed interest in Prolog standardization. In particular, the community is in the process of agreeing on a simple library for Prolog. WG17 hopes to co-locate a meeting with IJCLP in 2004.

Internationalization:

- For SC22/WG20, the U.S. TAG is INCITS/L2.
- L2 has been very active in dealing with WG20 issues this year. In addition to the technical work on various projects, L2 has been embroiled in the structural and coordination issues regarding WG20's program of work. Because of the very tight cooperation between L2 and the Unicode Technical Committee, which also deals broadly with internationalization issues, the awareness of the disconnect between the internationalization work underway in the Unicode Consortium and the internationalization projects in WG20 is particularly acute in L2.
- L2 helped craft a U.S. position carried into an ad hoc JTC1 meeting in May, 2003, aimed specifically at dealing with coordination of cultural and linguistic adaptability issues in JTC1 standards development, now that JTC1 has terminated its Technical Directions, including, most importantly, CLAU, which covered both WG20 and the other JTC1 working group for which L2 is TAG, SC2/WG2. That JTC1 meeting dealt with, but did not fully resolve, the issue of the working group jurisdiction for further maintenance of the ISO 14651 standard on international string ordering.
- ISO/IEC 14651 International String Ordering: There is an open project for Amendment #2 to the string ordering standard. The scope of that amendment is updating the tailorable template table from its current repertoire (covering up to Unicode 3.1) so as to cover the repertoire of Unicode 4.0 (just released). L2 participants bear the prime responsibility for drafting that updated table, which constitutes the majority of the 14651 standard. Work is underway now, and is very tightly coupled to the update of the synchronized standard from the Unicode Consortium: UTS #10, Unicode Collation Algorithm.
- ISO/IEC 15897 Registration of Cultural Elements: During the last year, L2 participated in the two CD ballots regarding the maintenance update of this standard. This standard was originally fast-tracked, and had numerous defects. The vast majority of the national body comments on the ballots were provided by L2, with painstakingly

detailed recommendations for aligning the registration procedures with the comprehensively revised ISO/IEC 2375 for the registration of character sets. (That work was also done mostly with input from L2, so L2 was well-placed to work on the update for another, related registration standard.) Resolution of ballot comments of 15897 has been *very* difficult, and has resulted in considerable frustration inside L2, as comments again and again are ignored or mishandled by the 15897 editor. The FCD balloting for 15897 is underway now, and it can be anticipated that L2 will once again produce voluminous comments on the draft.

- TR 14652 Specification Method for Cultural Conventions: This TR was all but completed last year, but got snagged in a last-minute controversy when it went for publication. ITTF objected to national body identifications in the extensive annex which identified open issues not resolved by consensus in WG20 during development of the document. This particular issue has been resolved, so that TR 14652 should be published soon. Because of the many other unresolved issues and the failure of consensus in the development of much of TR 14652's content, large sections of the document are being published overtly labeled as “controversial”.
- TR 10176 Guidelines for the Preparation of Programming Language Standards: The fourth edition of this TR was published -- the new content of which consisted entirely of an update to the table of recommended characters for identifiers, to bring it up-to-date against additions to ISO/IEC 10646 and the Unicode Standard. L2 provided the content of that table, to ensure that it stayed reasonably in synch with related recommendations being made by the Unicode Consortium. L2 is currently debating what would be the best route moving forward on this. Continuing to create updated editions of the entire TR just to update this one table seems inappropriate, and L2 is exploring whether it would make sense to find some other means to this end. Some possibilities which are under consideration are simply freezing the recommendations with no further changes, producing a new short TR focused only on the guidelines for characters for identifiers, or replacement of the table in the Annex by a pointer or pointers to recommendations maintained by other standards groups (the Unicode Consortium, W3C).
- Unicode in Programming Languages: L2 and the Unicode Consortium jointly provided an expert to an ad hoc session on the subject of Unicode in programming languages at the SC22 plenary in Finland, August, 2002. This substantially clarified the need for 16-bit character data type support in programming languages.